IV.B.2.N.a. Caespitose cold-deciduous dwarf-shrubland

IV.B.2.N.a.200. GUTIERREZIA SAROTHRAE DWARF-SHRUBLAND ALLIANCE
Snakeweed Dwarf-shrubland Alliance

GUTIERREZIA SAROTHRAE - (OPUNTIA SPP.) / PLEURAPHIS JAMESII DWARF-SHRUBLAND

Snakeweed - (Prickly-pear species) / James' Galleta Dwarf-shrubland

ELEMENT CONCEPT

GLOBAL SUMMARY: This dwarf-shrubland was described from Utah and northern Arizona where it occurs on level to gently sloping hillslopes, plateaus and bluffs. Aspects are reported from the southeast, south and southwest. Soils are variable, but tend to be fine-textured and may occur over gravel and cobbles. Disturbance may be important in maintaining this vegetation community as some stands have been created by chaining of trees and improper grazing by livestock. This broadly defined association is characterized by an open dwarf-shrub canopy (10-30% cover) that is dominated by *Gutierrezia sarothrae*, frequently with *Opuntia* spp. and an herbaceous layer with *Pleuraphis jamesii* present to abundant (1-30% cover). Some stands have a diverse woody layer that includes low cover of several shrub species and occasional *Pinus edulis* or *Juniperus osteosperma* trees. The herbaceous layer is typically dominated by graminoids with several species present including *Pleuraphis jamesii, Achnatherum hymenoides, Aristida purpurea, Bouteloua gracilis, Elymus elymoides, Hesperostipa comata*, or *Pascopyrum smithii*. There is usually only sparse cover of native forbs like *Chamaesyce* spp. or *Sphaeralcea coccinea.* Introduced species such as *Bromus tectorum* or *Salsola kali* may dominate the herbaceous layer of some disturbed stands.

ENVIRONMENTAL DESCRIPTION

USFWS Wetland System: Not Applicable

Zion National Park Environment: This association occurs at elevations around 4000 feet on gently sloping hillsides with a southeastern aspect. Soils are clayey in comparison to most of the very sandy soils throughout the park. One sample documents this association at 7400 feet with different herbaceous components.

Global Environment: This association is described from Utah and northern Arizona where it occurs on level to gently sloping hillslopes, plateaus and bluffs. Elevations range from 1350-2260 m. Aspects are reported from the southeast, south and southwest. Soils are variable, but tend to be fine-textured and may occur over gravel and cobbles. Disturbance may be important in maintaining this vegetation community as some stands have been created by chaining of trees and improper grazing by livestock.

VEGETATION DESCRIPTION

Zion National Park Vegetation: Average foliar cover of *Gutierrezia sarothrae* is 10%, and *Opuntia* spp. are present to abundant in this association. *Pleuraphis jamesii* ranges from absent to abundant. Other species that occur at the sampled sites are *Psorothamnus fremontii, Coleogyne ramosissima, Juniperus osteosperma, Elymus elymoides*, and *Bromus tectorum*. At the high-elevation site, *Poa fendleriana, Bouteloua gracilis, Arenaria fendleri*, and *Eriogonum umbellatum* dominate the herbaceous layer.

Global Vegetation: This broadly defined association is characterized by an open dwarf-shrub canopy (10-30% cover) that is dominated by *Gutierrezia sarothrae*, frequently with *Opuntia* spp. and an herbaceous layer with *Pleuraphis jamesii* present to abundant (1-30% cover). Some stands have a diverse woody layer that includes low cover of *Artemisia nova, Atriplex canescens, Atriplex confertifolia, Chrysothamnus viscidiflorus, Coleogyne ramosissima, Ephedra* spp., *Eriogonum* spp., *Grayia spinosa, Lycium pallidum, Purshia tridentata*, or occasional *Pinus edulis* or *Juniperus osteosperma* trees. The herbaceous layer is typically dominated by graminoids with several species present including *Pleuraphis jamesii, Achnatherum hymenoides, Aristida purpurea, Bouteloua gracilis, Elymus elymoides, Hesperostipa comata*, or *Pascopyrum smithii*. There is usually only sparse cover of native forbs like *Chamaesyce* spp. or *Sphaeralcea coccinea.* Introduced species such as *Bromus tectorum, Erodium cicutarium, Sisymbrium altissimum*, or *Salsola kali* may dominate the herbaceous layer of some disturbed stands.

Global Dynamics: *Gutierrezia sarothrae* occurs in many natural grassland and steppe communities in the western U.S. and is known to increase when these communities are disturbed mechanically or by over-grazing (Stubbendieck et al. 1992, USFS 1937). The role of disturbance in this association needs further study to understand its successional nature.

MOST ABUNDANT SPECIES

Zion National Park

Stratum	Species
SHORT SHRUB	*Gutierrezia sarothrae, Opuntia* spp.
GRAMINOID	*Bromus tectorum, Elymus elymoides,Pleuraphis jamesii*

Global

Stratum	Species
DWARF SHRUB	*Gutierrezia sarothrae*
GRAMINOID	*Pleuraphis jamesii*

CHARACTERISTIC SPECIES

Zion National Park

Stratum	Species
SHORT SHRUB	*Gutierrezia sarothrae, Opuntia* spp.
GRAMINOID	*Pleuraphis jamesii*

Global

Stratum	Species
DWARF SHRUB	*Gutierrezia sarothrae*
GRAMINOID	*Pleuraphis jamesii*

GLOBAL SIMILAR ASSOCIATIONS:

- Gutierrezia sarothrae / Pleuraphis rigida Shrub Herbaceous Vegetation (CEGL001543)--possibly an anthropogenicly disturbed *Pleuraphis rigida* grassland.
- Gutierrezia sarothrae - Krascheninnikovia lanata - Atriplex canescens / Bouteloua eriopoda Shrub Herbaceous Vegetation (CEGL001733)--rare grassland endemic to Grand Canyon National Park.
- Gutierrezia sarothrae / Sporobolus airoides - Pleuraphis jamesii Shrub Herbaceous Vegetation (CEGL001776)--described from northwestern New Mexico.

GLOBAL STATUS AND CLASSIFICATION COMMENTS

Global Conservation Status Rank: G?.

Global Comments: This broadly defined dwarf-shrubland includes stands that could also be classified as a dwarf-shrub herbaceous association.

ELEMENT DISTRIBUTION

Zion National Park Range: This association is commonly found in the southwestern region of the park where elevation is low and the climate is very dry.

Global Range: This association is described from Utah and northern Arizona, but is likely more widespread throughout the semi-arid western U.S.

Nations: US
States/Provinces: AZ UT

ELEMENT SOURCES

Zion National Park Inventory Notes: Plots: RH37, 39, 40, 41, 56, 266, 505
Classification Confidence: 3 **Identifier:** CEGL002690
REFERENCES: Stubbendieck et al. 1992, USFS 1937, Von Loh et al. 2002